DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: STPN0-0007-03(033), Lowndes County
P.I. No. 422710
US 84/SR 38 @ Norfolk Southern RR

OFFICE: Engineering Services

DATE: April 14, 2009

FROM: Ronald E. Wishon, State Project Review Engineer REW

TO: Brent A. Story, P.E., State Road Design Engineer
Attention: Tim Matthews, Project Manager

SUBJECT: IMPLEMENTATION OF VALUE ENGINEERING STUDY ALTERNATIVES

Recommendations for implementation of Value Engineering Study Alternatives are indicated in the table below. Incorporate alternatives recommended for implementation to the extent reasonable in the design of the project.

ALT No.	Description	Savings PW & LCC	Implement	Comments
ROADWAY				
A-4	Eliminate the sidewalk on the south side (right) of the W. Hill Avenue mainline roadway through the entire elevated section.	$246,000	No	In order for pedestrians to cross the bridge from the south side they would have to travel on the frontage road an additional ~ ¼ mile. Once on the north side of W. Hill Avenue, they can continue across the bridge. In order to get back on the south side, they would have to travel another ~1/2 mile. Additionally, pedestrians may attempt to cross the Rail Road at grade to avoid the distance. Therefore, it is recommended that we keep the sidewalk on the south side of W. Hill Ave.
A-6	Eliminate the right turn lane from westbound W. Hill Avenue into Wells Street.	$60,500	Yes	This should be done.

BRIDGE				
C-1	Use 60-inch Steel girders in-lieu-of BT-63 pre-stressed concrete girders to construct the W. Hill Avenue railroad overpass bridge.	$100,000	No	The cost estimate for the current design is not correct as listed in the VE report. Using the same unit cost for the MSE walls as was used for the VE concept estimate ($44.67), the MSE wall cost for the current design would be about $1,822,000.This would make the cost of the Current Design $4,122,000 versus $4,786,531 for the VE Concept. Also, steel bridges are very costly to maintain compared to concrete. The additional maintenance costs of the steel bridge were not accounted for in the VE estimate.
C1.1	Use smaller BT-54 pre-stressed concrete beams in-lieu-of larger BT-63 pre-stressed concrete beams to construct the W. Hill Avenue railroad overpass Bridge.	$200,000	No	The current design optimizes the beam spacing of the BT-63 for the most efficient structure. Using smaller beams increases the construction time by requiring more formwork between beams for the deck, diaphragms, edge beams, etc. This increased construction time was not accounted for in the VE estimate. The use of the smaller beams also results in a structure which is less than desirable.

ROADWAY				
D-1	Use a thinner pavement section for all frontage roads and side / cross streets in lieu-of the same pavement design as the W. Hill Avenue mainline pavement.	$295,000	Yes	This should be done. A pavement design analysis will be evaluated through GDOT's pavement design review process for final approval. Once the soil survey report is complete, the SSF will also indicate any additional reduction in thickness. If OMR determines this cannot be implemented, Project Manager should request a reversal of the recommendation.
D-3	Eliminate the New South Thomas Street Connector between W. Hill Avenue and the new One Way South Frontage Road.	$365,000	Yes	This should be done. If during the Public Hearing Process this cannot be implemented, the Project Manager should request a reversal of the recommendation.
D-8	Make both sides of the Wells Street / W. Hill Avenue intersection right-in / right-out only.	(-$7,000)	Yes	This should be done.
D-10	Realign the West Street / W. Hill Avenue intersection to meet at a 90 degree Angle.	$70,000	No	In order to replicate this design, we would have to use a horizontal curve of 200' or less. After reviewing the AASHTO's guidelines for *"Geometric Design of Very Low-volume Local Roads, (ADT<400)"*, this option is not achievable because the ADT in 2033 is 800. Additionally, using a larger curve would impact historic properties to the north which are not impacted now.

ROADWAY Continued				
J-1	Increase the inlet spacing on the new W. Hill Avenue overpass approaches and combine the storm drains into a single trunk line.	Proposed= $40,000 Actual= $42,540	Yes	This should be done.
J-1	Combine the storm drains on the W. Hill Avenue overpass approaches into a single trunk line with the original inlet spacing.	Proposed= $30,000 Actual= $32,053	No	Since J-1 will be implemented.

The Office of Engineering Services concurs with the Project Manager's responses.

Approved: _____ **Date:** 4/16/09
Gerald M. Ross, P. E., Chief Engineer

REW/DMF

Attachments

c: Genetha Rice-Singleton
Brent Story
Andy Casey
Tim Matthews
Daniel Sabia
Paul Liles
Bill Ingalsbe
Bill DuVall
Vince Wilson
Bobby Dollar
Joe Sheffield
Brent Thomas
Tim Warren
Bill Cooper
Van Mason
Joe Cowan
Scott Chambers
Jerry Hughes
Ken Werho
Lisa Myers
Douglas Fadool
General Files

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE STPN0-0007-03(033), Lowndes County
P.I. No. 422710
US 84/SR 38 @ Norfolk Southern RR

OFFICE Road Design

DATE April 13, 2009

FROM Brent A. Story, P.E., State Road Design Engineer

TO Ronald E. Wishon, Project Review Engineer

SUBJECT **Value Engineering Study Report Response**

This office has received and reviewed the recommendations of the Value Engineering Study Workshop Report dated March 24, 2009. Below are our responses to the recommendations:

Alternatives:

Idea A-4: Eliminate the sidewalk on the south side (right) of the W. Hill Avenue mainline roadway through the entire elevated section:

*This alternate **is not** recommended for implementation.*

- In order for pedestrians to cross the bridge from the south side they would have to travel on the frontage road an additional ~ ¼ mile. Once on the north side of W. Hill Avenue, they can continue across the bridge. In order to get back on the south side, they would have to travel another ~1/2 mile. Additionally, pedestrians may attempt to cross the Rail Road at grade to avoid the distance. Therefore, it is recommended that we keep the sidewalk on the south side of W. Hill Avenue. It is noted in "*Designing Pedestrian Facilities for Accessibility*" that Pedestrians will cross where it's most convenient. If the distance to travel seems out of reach, pedestrians will cross midblock which is a serious safety risk.

Idea A-6 Eliminate the right turn lane from westbound W. Hill Avenue into Wells Street:

*This alternate **is** recommended for implementation.*

- When the design speed is less than 45 mph the following criteria is considered for right turn lane need:
  - Traffic on the mainline exceeds 10,000 vpd
  - Right turn volumes from mainline exceeding 20 vph and traffic volume on the side road exceeds 200 vpd.

  The traffic on W. Hill Avenue and N. Wells Street does not exceed this range.

Idea C-1 OPTION 1 Use 60-inch Steel girders in-lieu-of BT-63 pre-stressed concrete girders to construct the W. Hill Avenue railroad overpass bridge:

*This alternative **is not** recommended for implementation.*

- The cost estimate for the current design is not correct as listed in the VE report. Using the same unit cost for the MSE walls as was used for the VE concept estimate ($44.67), the MSE wall cost for the current design would be about $1,822,000. This would make the cost of the Current Design $4,122,000 versus $4,786,531 for the VE Concept. Also, steel bridges are very costly to maintain compared to concrete. The additional maintenance costs of the steel bridge were not accounted for in the VE estimate.

Idea C-1.1 OPTION 2 Use smaller BT-54 pre-stressed concrete beams in-lieu-of larger BT-63 pre-stressed concrete beams to construct the W. Hill Avenue railroad overpass bridge:

*This alternative **is not** recommended for implementation.*

- The current design optimizes the beam spacing of the BT-63 for the most efficient structure. Using smaller beams increases the construction time by requiring more formwork between beams for the deck, diaphragms, edge beams, etc. This increased construction time was not accounted for in the VE estimate. The use of the smaller beams also results in a structure which is less than desirable.

Idea D-1 Use a thinner pavement section for all frontage roads and side / cross streets in lieu-of the same pavement design as the W. Hill Avenue mainline pavement:

*This alternative **is** recommended for implementation.*

- The VE team recommends using the following:
  - 1.5" 12.5 mm
  - 2" 19 mm
  - 3" 25 mm
  - 6" GAB.
- A pavement design analysis will be evaluated through GDOT's pavement design review process for final approval. Once the soil survey report is complete, the SSF will also indicate any additional reduction in thickness.

Idea D-3 Eliminate the New South Thomas Street Connector between W. Hill Avenue and the new One Way South Frontage Road:

This alternative will be considered for implementation.

- PM will coordinate with Stake Holders and get public feedback during Public Hearing process.

Idea D-8 Make both sides of the Wells Street / W. Hill Avenue intersection right-in / right-out only:

*This alternative **is** recommended for implementation.*

- Although this alternate increase cost by adding concrete islands, it is recommend due to safety concerns for left turn movements.
- Adding the islands would also provide better operational movements.

Idea D-10 Realign the West Street / W. Hill Avenue intersection to meet at a 90 degree angle:

This alternative ***is not*** *recommended for implementation.*

- In order to replicate this design, we would have to use a horizontal curve of 200' or less. After reviewing the AASHTO's guidelines for *"Geometric Design of Very Low-volume Local Roads, (ADT<400)"*, this option is not achievable because the ADT in 2033 is 800.
- Additionally, using a larger curve would impact historic properties to the north which are not impacted now.

Idea J-1 Increase the inlet spacing on the new W. Hill Avenue overpass approaches and combine the storm drains into a single trunk line:

This alternative ***is*** *recommended for implementation.*

- Approximate savings = (57 lf x $43.67/ft) - (1 catch basin x $2492.34) – (385 lf x $43.67/ft) = $16,816.10
- Approximate savings = (140 lf x $43.67/ft) - (1 catch basin x $2492.34) – (672 lf x $43.67/ft) = $25724.78
- Total Savings = $42,540.88

Idea J-1.1 ALTERNATIVE to IDEA J-1 Combine the storm drains on the W. Hill Avenue overpass approaches into a single trunk line with the original inlet spacing: *N/A since we are implementing J-1.*

- Approximate savings = (196 lf x $43.67/ft) - (672 lf x $43.67/ft) = $20786.92
- Approximate savings = (127 lf x $43.67/ft) – (385 lf x $43.67/ft) = $11266.86
- Total savings = $32053.78

If there are any questions or comments concerning these recommendations, please contact Tim Matthews, P.E. at (404) 631-1552.

BAS:CAC:twm

cc: Director of Preconstruction
Lisa Myers, Engineering Services
Tim Matthews, Road Design
Paul Liles/Pam Russell – Bridge Design
Glenn Bowman/Bobby Dollar – OEL
James Magnus – Construction
Joe Cowan/Dot Downie – District 4 Construction
Carlos Baker – TS&D

PRECONSTRUCTION STATUS REPORT FOR PI:422710-

PROJ ID : 422710-
COUNTY : Lowndes
LENGTH (MI) : 0.62
PROJ NO.: STPN0-0007-03(033)
PROJ MGR: Matthews, Tim
OFFICE : Road Design
CONSULTANT: No Consultant, GDOT In-House Design
SPONSOR : GDOT
DESIGN FIRM:

SR 38/US 84/W. HILL AVE GRADE SEPARATION @ NORFOLK SOU. RR

MPO: Valdosta
TIP #: VL07
MODEL YR :
TYPE WORK: Bridges
CONCEPT: GRADE SEP
PROG TYPE: New Construction
Prov. for ITS: N
BOND PROJ :

DOT DIST: 4
CONG. DIST: 1
BIKE: N
MEASURE: E
NEEDS SCORE: 06
BRIDGE SUFF:

MGMT LET DATE : 07/15/2012
MGMT ROW DATE : 09/15/2010
SCHED LET DATE : 8/8/2012
WHO LETS?: GDOT Let
LET WITH :

SCHED START	*SCHED FINISH*	*ACTIVITY*	*ACTUAL START*	*ACTUAL FINISH*	*%*
		Concept Development	5/15/2002	5/19/2005	100
		Concept Meeting	9/10/2003	9/10/2003	100
		PM Submit Concept Report	4/20/2005	4/20/2005	100
		Receive Preconstruction Concept Approval	4/28/2005	5/10/2005	100
		Management Concept Approval Complete	**5/13/2005**	**5/19/2005**	**100**
	5/5/2009	Value Engineering Study	12/2/2008		81
		Public Information Open House Held	9/15/2004	9/16/2004	100
	4/8/2010	**Environmental Approval**	**8/1/2007**		28
9/11/2009	10/22/2009	Pub Hear Held/Comm Resp (EA/FONSI, GEPA)			0
		Field Surveys/SDE	6/20/2005	11/16/2005	100
	8/13/2009	**Preliminary Plans**	**9/4/2006**		97
		Preliminary Bridge Design	3/28/2007	11/8/2007	100
		Underground Storage Tanks	10/22/2004	2/17/2009	100
4/30/2010	5/3/2010	PFPR Inspection			0
5/4/2010	7/26/2010	R/W Plans Preparation			0
7/27/2010	**8/27/2010**	**R/W Plans Final Approval**			**0**
6/9/2010	6/11/2010	L & D Approval			0
8/30/2010	6/12/2012	R/W Acquisition			0
1/20/2011	2/2/2011	Stake R/W			0
4/24/2009	12/8/2009	Soil Survey			0
4/24/2009	1/26/2010	Bridge Foundation Investigation			0
6/14/2010	**7/11/2011**	**Final Design**			2
	12/17/2009	Final Bridge Plans Preparation	4/29/2008		15
8/2/2011	8/3/2011	FFPR Inspection			0
8/17/2011	8/30/2011	Submit FFPR Responses (OES)			0

PROGRAMMED FUNDS

Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	2001	2001	1,500,000.00	Q20	AUTHORIZED	11/2/2000
ROW	2008	2010	8,151,688.00	L050	PRECST	
UTL	NONE	LOCL	87,880.00	LOC	PRECST	
CST	LR	LR	22,951,245.83	L050	PRECST	

PE Cost Est Amt:		Date:	
ROW Cost Est Amt:	7,618,400.00	Date:	1/6/2009
Utility Cost Est Amt	87,880.00	Date:	1/6/2009
CST Cost Est Amt:	14,090,074.00	Date:	2/10/2009

STIP AMOUNTS

Phase	Cost	Fund
PE		Q20
ROW	4,551,000.00	L050
UTL	0.00	LOC
CST	0.00	L050

PDD: ASSIGNED TO ROAD DESIGN. 7/21/99.
Bridge: PSR 11/03/08
Design: TWM/JT/DS-Working PREL. PLANS (4-2009)
EIS: EA|NotApvd|OnSchedRW|Updated4-6-09|Dollar
LGPA: VALDOSTA SGN DO UTILITIES 7-25-02|RESCISSION LETTER SENT TO VALDOSTA 6-8-05.
Traffic Op: >3-6-09-PB: working on sign/mark
UST: SUB TO OMR 01-27-03 (2 SITES) 10-22-04 (4 SITES)
Utility: REV-EST. SUB. 04/11/2005 SUE QL-B compl 2-11-08
EMG: GRADE SEPARATION (BRIDGES)

District Comments

PE PROJ NO: PESTP000703033., (1) sent extra survey data on top of rail info on 1/03/08.

Prel. Parcel CT: 46
Total Parcel in ROW System:
Cond. Filed:
Acquired by: DOT
DEEDS CT:

Under Review:
Options - Pending:
Relocations:
Acquisition MGR:

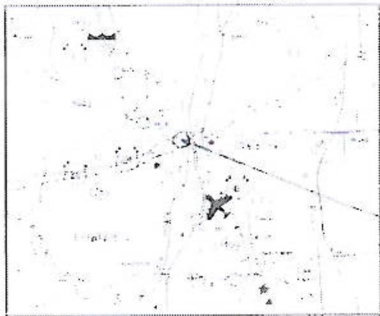
Released:
Condemnations- Pend:
Acquired:
R/W Cert Date:

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

PLAN AND PROFILE OF PROPOSED
U.S.84 / S.R.38 / WEST HILL AVENUE
GRADE SEPARATION AT
NORFOLK SOUTHERN RAILROAD

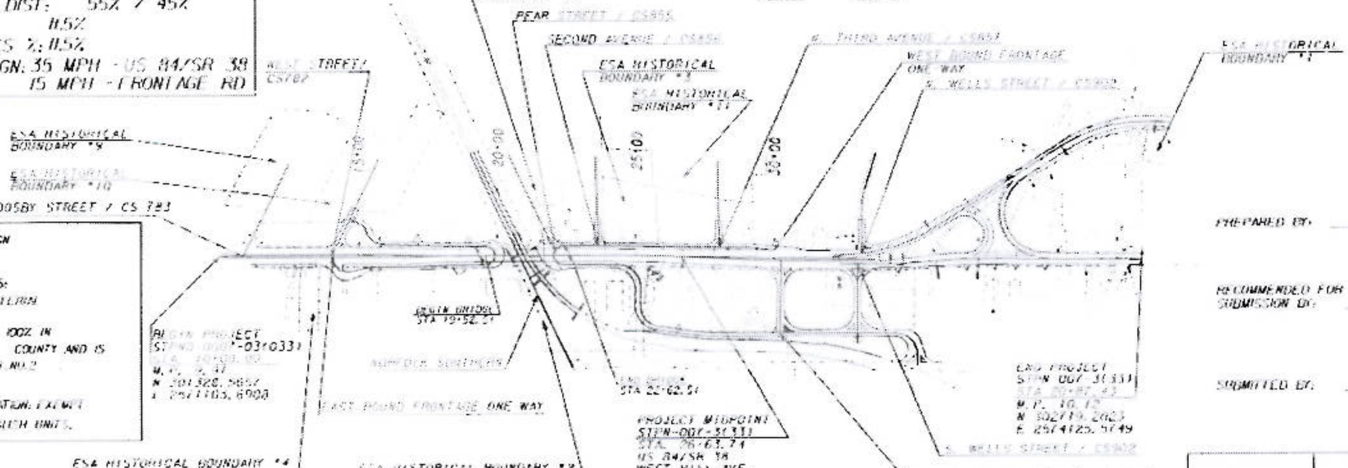
FEDERAL AID PROJECT
STPNO-0007-03(033)
LOWNDES COUNTY

FEDERAL ROUTE # 84
STATE ROUTE # 38
P.I.NO. 422710



LOCATION SKETCH

DESIGN DATA:
TRAFFIC A.D.T.: 23,000 (2013)
TRAFFIC A.D.T.: 33,000 (2033)
TRAFFIC D.H.V.: 3,164 (2033)
DIRECTIONAL DIST.: 55% / 45%
% TRUCKS: 11.5%
24 HR.TRUCKS %: 11.5%
SPEED DESIGN: 35 MPH - US 84/SR 38
15 MPH - FRONTAGE RD



LOCATION & DESIGN APPROVAL DATE:

FUNCTIONAL CLASS:
URBAN MAJOR ARTERIAL

THIS PROJECT IS 100% IN LOWNDES COUNTY AND IS 100% IN CONG. DIST. NO. 2

PROJECT DESIGNATION: EXEMPT
DESIGNED IN ENGLISH UNITS.

SCALE IN FEET: 0 200 400 800

LENGTH OF PROJECT	LOWNDES COUNTY COUNTY NUMBER
	MILES
NET LENGTH OF ROADWAY	4.73
NET LENGTH OF BRIDGES	0.06
NET LENGTH OF PROJECT	4.67
NET LENGTH OF EXCEPTIONS	0.00
GROSS LENGTH OF PROJECT	4.73

PREPARED BY: DESIGN

RECOMMENDED FOR SUBMISSION BY: DESIGN

SUBMITTED BY: STATE DESIGN ENGINEER

DATE | CHIEF ENGINEER

PLANS COMPLETED

REVISIONS